

Release notes for ENDF/B Development n-070_Yb_172
evaluation



April 26, 2017

- groupie Errors:

1. Very small elastic cross section found
0: Small elastic

```
Multi-Group and Multi-Band Parameters from ENDF/B Data (GROUPIE 2015-2)
```

```
ENDF/B Input and Output Data Filenames
ENDFB.IN
ENDFB.OUT
... [97 more lines]
```

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

```
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 2.5 and S = 1.5 for "capture"
```

2. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.19%
```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: nonelastic (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.66%
```

- fudge-4.0 Errors:

1. Calculated and tabulated Q values disagree.
reaction label 41: n[multiplicity:'2'] + Yb171 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -7986980.805206299 eV vs -8019461. eV!
```

2. Calculated and tabulated Q values disagree.
reaction label 42: n[multiplicity:'3'] + Yb170 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -14601476.94195557 eV vs -14633960. eV!
```

3. Calculated and tabulated Q values disagree.
reaction label 43: n + H1 + Tm171 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -7301175.140991211 eV vs -7333655. eV!
```

4. Calculated and tabulated Q values disagree.
reaction label 44: n + H2 + Tm170 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -12562908.15377808 eV vs -12595390. eV!
```

5. Calculated and tabulated Q values disagree.
reaction label 45: Yb173 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 6399798.953063965 eV vs 6367318. eV!

6. Calculated and tabulated Q values disagree.
reaction label 46: n + He4 + Er168 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 1344015.445617676 eV vs 1311535. eV!

7. Calculated and tabulated Q values disagree.
reaction label 47: H1 + Tm172_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -1065463.60647583 eV vs -1097944. eV!

8. Calculated and tabulated Q values disagree.
reaction label 48: H2 + Tm171_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5076609.04006958 eV vs -5109089. eV!

9. Calculated and tabulated Q values disagree.
reaction label 49: H3 + Tm170_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -6305675.213134766 eV vs -6338155. eV!

10. Calculated and tabulated Q values disagree.
reaction label 50: He3 + Er170_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5973091.290405273 eV vs -6005571. eV!

11. Calculated and tabulated Q values disagree.
reaction label 51: He4 + Er169_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 7347285.681610107 eV vs 7314805. eV!

- **njoy2012 Warnings:**

1. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (0): HEATR/hinit (4)

---message from hinit---mf6, mt 16 does not give recoil za= 70171
one-particle recoil approx. used.

2. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (1): HEATR/hinit (4)

---message from hinit---mf6, mt 17 does not give recoil za= 70170
one-particle recoil approx. used.

3. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

---message from hinit---mf6, mt 22 does not give recoil za= 70172
one-particle recoil approx. used.

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

```
---message from hinit---mf6, mt 28 does not give recoil za= 70172
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

```
---message from hinit---mf6, mt 32 does not give recoil za= 70172
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

```
---message from hinit---mf6, mt 51 does not give recoil za= 70172
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

```
---message from hinit---mf6, mt 52 does not give recoil za= 70172
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)

```
---message from hinit---mf6, mt 53 does not give recoil za= 70172
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)

```
---message from hinit---mf6, mt 54 does not give recoil za= 70172
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (9): HEATR/hinit (4)

```
---message from hinit---mf6, mt 55 does not give recoil za= 70172
one-particle recoil approx. used.
```

11. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (10): HEATR/hinit (4)

```
---message from hinit---mf6, mt 56 does not give recoil za= 70172
one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (11): HEATR/hinit (4)

```
---message from hinit---mf6, mt 57 does not give recoil za= 70172
one-particle recoil approx. used.
```

13. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (12): HEATR/hinit (4)

---message from hinit---mf6, mt 58 does not give recoil za= 70172
one-particle recoil approx. used.

14. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (13): HEATR/hinit (4)

---message from hinit---mf6, mt 59 does not give recoil za= 70172
one-particle recoil approx. used.

15. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (14): HEATR/hinit (4)

---message from hinit---mf6, mt 60 does not give recoil za= 70172
one-particle recoil approx. used.

16. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (15): HEATR/hinit (4)

---message from hinit---mf6, mt 61 does not give recoil za= 70172
one-particle recoil approx. used.

17. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (16): HEATR/hinit (4)

---message from hinit---mf6, mt 62 does not give recoil za= 70172
one-particle recoil approx. used.

18. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (17): HEATR/hinit (4)

---message from hinit---mf6, mt 63 does not give recoil za= 70172
one-particle recoil approx. used.

19. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (18): HEATR/hinit (4)

---message from hinit---mf6, mt 64 does not give recoil za= 70172
one-particle recoil approx. used.

20. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (19): HEATR/hinit (4)

---message from hinit---mf6, mt 65 does not give recoil za= 70172
one-particle recoil approx. used.

21. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (20): HEATR/hinit (4)

---message from hinit---mf6, mt 66 does not give recoil za= 70172
one-particle recoil approx. used.

22. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (21): HEATR/hinit (4)

---message from hinit---mf6, mt 67 does not give recoil za= 70172
one-particle recoil approx. used.

23. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (22): HEATR/hinit (4)

---message from hinit---mf6, mt 68 does not give recoil za= 70172
one-particle recoil approx. used.

24. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (23): HEATR/hinit (4)

---message from hinit---mf6, mt 69 does not give recoil za= 70172
one-particle recoil approx. used.

25. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (24): HEATR/hinit (4)

---message from hinit---mf6, mt 70 does not give recoil za= 70172
one-particle recoil approx. used.

26. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (25): HEATR/hinit (4)

---message from hinit---mf6, mt 71 does not give recoil za= 70172
one-particle recoil approx. used.

27. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (26): HEATR/hinit (4)

---message from hinit---mf6, mt 72 does not give recoil za= 70172
one-particle recoil approx. used.

28. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (27): HEATR/hinit (4)

---message from hinit---mf6, mt 73 does not give recoil za= 70172
one-particle recoil approx. used.

29. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (28): HEATR/hinit (4)

---message from hinit---mf6, mt 74 does not give recoil za= 70172
one-particle recoil approx. used.

30. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (29): HEATR/hinit (4)

---message from hinit---mf6, mt 75 does not give recoil za= 70172
one-particle recoil approx. used.

31. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (30): HEATR/hinit (4)

---message from hinit---mf6, mt 76 does not give recoil za= 70172
one-particle recoil approx. used.

32. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (31): HEATR/hinit (4)

---message from hinit---mf6, mt 77 does not give recoil za= 70172
one-particle recoil approx. used.

33. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (32): HEATR/hinit (4)

---message from hinit---mf6, mt 78 does not give recoil za= 70172
one-particle recoil approx. used.

34. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (33): HEATR/hinit (4)

---message from hinit---mf6, mt 79 does not give recoil za= 70172
one-particle recoil approx. used.

35. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (34): HEATR/hinit (4)

---message from hinit---mf6, mt 80 does not give recoil za= 70172
one-particle recoil approx. used.

36. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (35): HEATR/hinit (4)

---message from hinit---mf6, mt 81 does not give recoil za= 70172
one-particle recoil approx. used.

37. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (36): HEATR/hinit (4)

---message from hinit---mf6, mt 82 does not give recoil za= 70172
one-particle recoil approx. used.

38. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (37): HEATR/hinit (4)

---message from hinit---mf6, mt 83 does not give recoil za= 70172
one-particle recoil approx. used.

39. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (38): HEATR/hinit (4)

---message from hinit---mf6, mt 84 does not give recoil za= 70172
one-particle recoil approx. used.

40. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (39): HEATR/hinit (4)

---message from hinit---mf6, mt 85 does not give recoil za= 70172
one-particle recoil approx. used.

41. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (40): HEATR/hinit (4)

---message from hinit---mf6, mt 86 does not give recoil za= 70172
one-particle recoil approx. used.

42. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (41): HEATR/hinit (4)

```
---message from hinit---mf6, mt 87 does not give recoil za= 70172
one-particle recoil approx. used.
```

43. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (42): HEATR/hinit (4)

```
---message from hinit---mf6, mt 88 does not give recoil za= 70172
one-particle recoil approx. used.
```

44. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (43): HEATR/hinit (4)

```
---message from hinit---mf6, mt 89 does not give recoil za= 70172
one-particle recoil approx. used.
```

45. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (44): HEATR/hinit (4)

```
---message from hinit---mf6, mt 91 does not give recoil za= 70172
one-particle recoil approx. used.
```

46. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (45): HEATR/hinit (4)

```
---message from hinit---mf6, mt203 does not give recoil za= 69172
one-particle recoil approx. used.
```

47. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (46): HEATR/hinit (4)

```
---message from hinit---mf6, mt204 does not give recoil za= 69171
one-particle recoil approx. used.
```

48. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (47): HEATR/hinit (4)

```
---message from hinit---mf6, mt205 does not give recoil za= 69170
one-particle recoil approx. used.
```

49. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (48): HEATR/hinit (4)

```
---message from hinit---mf6, mt206 does not give recoil za= 68170
one-particle recoil approx. used.
```

50. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (49): HEATR/hinit (4)

```
---message from hinit---mf6, mt207 does not give recoil za= 68169
one-particle recoil approx. used.
```

- njoy2012 Errors:

1. An unidentified mismatch in a photon production sum
check...ace consistency check (0): Gamma sum

```
check photon production sum
  consis: mismatch at 8.125000E-06 gpd= 2.730936E-01 sum= 2.730662E-01
```

2. An unidentified mismatch in a photon production sum
check...ace consistency check (1): Gamma sum

```
check photon production sum
  consis: mismatch at 2.750000E-05 gpd= 1.555671E-01 sum= 1.555866E-01
```

3. An unidentified mismatch in a photon production sum
check...ace consistency check (2): Gamma sum

```
check photon production sum
  consis: mismatch at 2.937500E-05 gpd= 1.516446E-01 sum= 1.516218E-01
```

4. An unidentified mismatch in a photon production sum
check...ace consistency check (3): Gamma sum

```
check photon production sum
  consis: mismatch at 3.500000E-05 gpd= 1.423565E-01 sum= 1.423783E-01
```

5. An unidentified mismatch in a photon production sum
check...ace consistency check (4): Gamma sum

```
check photon production sum
  consis: mismatch at 3.687500E-05 gpd= 1.399882E-01 sum= 1.400201E-01
```

6. An unidentified mismatch in a photon production sum
check...ace consistency check (5): Gamma sum

```
check photon production sum
  consis: mismatch at 3.875000E-05 gpd= 1.379900E-01 sum= 1.379645E-01
```

7. An unidentified mismatch in a photon production sum
check...ace consistency check (6): Gamma sum

```
check photon production sum
  consis: mismatch at 4.625000E-05 gpd= 1.322913E-01 sum= 1.323254E-01
```

8. An unidentified mismatch in a photon production sum
check...ace consistency check (7): Gamma sum

```
check photon production sum
  consis: mismatch at 5.546875E-05 gpd= 1.301757E-01 sum= 1.301959E-01
```

9. An unidentified mismatch in a photon production sum
check...ace consistency check (8): Gamma sum

```
check photon production sum
  consis: mismatch at 2.197603E-04 gpd= 2.170950E-01 sum= 2.170651E-01
```

10. An unidentified mismatch in a photon production sum
check...ace consistency check (9): Gamma sum

```
check photon production sum
  consis: mismatch at 2.271837E-04 gpd= 1.533407E-01 sum= 1.533647E-01
```

11. An unidentified mismatch in a photon production sum
check...ace consistency check (10): Gamma sum

```
check photon production sum
  consis: mismatch at 2.307613E-04 gpd= 1.337296E-01 sum= 1.337570E-01
```

12. An unidentified mismatch in a photon production sum
check...ace consistency check (11): Gamma sum

```
check photon production sum
  consis: mismatch at 2.379165E-04 gpd= 1.059041E-01 sum= 1.058823E-01
```

13. An unidentified mismatch in a photon production sum
check...ace consistency check (12): Gamma sum

```
check photon production sum
  consis: mismatch at 2.436406E-04 gpd= 9.040025E-02 sum= 9.041457E-02
```

14. An unidentified mismatch in a photon production sum
check...ace consistency check (13): Gamma sum

```
check photon production sum
  consis: mismatch at 2.475760E-04 gpd= 8.207478E-02 sum= 8.208954E-02
```

15. An unidentified mismatch in a photon production sum
check...ace consistency check (14): Gamma sum

```
check photon production sum
  consis: mismatch at 2.528231E-04 gpd= 7.308327E-02 sum= 7.309582E-02
```

16. An unidentified mismatch in a photon production sum
check...ace consistency check (15): Gamma sum

```
check photon production sum
  consis: mismatch at 2.554467E-04 gpd= 6.930906E-02 sum= 6.931794E-02
```

17. An unidentified mismatch in a photon production sum
check...ace consistency check (16): Gamma sum

```
check photon production sum
  consis: mismatch at 2.580703E-04 gpd= 6.590487E-02 sum= 6.593067E-02
```

18. An unidentified mismatch in a photon production sum
check...ace consistency check (17): Gamma sum

```
check photon production sum
  consis: mismatch at 2.624826E-04 gpd= 6.098361E-02 sum= 6.096906E-02
```

19. An unidentified mismatch in a photon production sum
check...ace consistency check (18): Gamma sum

```
check photon production sum
  consis: mismatch at 2.642714E-04 gpd= 5.920751E-02 sum= 5.919604E-02
```

20. An unidentified mismatch in a photon production sum
check...ace consistency check (19): Gamma sum

```
check photon production sum
  consis: mismatch at 2.678490E-04 gpd= 5.598834E-02 sum= 5.599952E-02
```

21. An unidentified mismatch in a photon production sum
check...ace consistency check (20): Gamma sum

```
check photon production sum
  consis: mismatch at 2.696378E-04 gpd= 5.458227E-02 sum= 5.455959E-02
```

22. An unidentified mismatch in a photon production sum
check...ace consistency check (21): Gamma sum

```
check photon production sum
  consis: mismatch at 2.750042E-04 gpd= 5.080810E-02 sum= 5.082031E-02
```

23. An unidentified mismatch in a photon production sum
check...ace consistency check (22): Gamma sum

```
check photon production sum
  consis: mismatch at 2.785818E-04 gpd= 4.873601E-02 sum= 4.872573E-02
```

24. An unidentified mismatch in a photon production sum
check...ace consistency check (23): Gamma sum

```
check photon production sum
  consis: mismatch at 2.821594E-04 gpd= 4.695996E-02 sum= 4.694345E-02
```

25. An unidentified mismatch in a photon production sum
check...ace consistency check (24): Gamma sum

```
check photon production sum
  consis: mismatch at 2.857370E-04 gpd= 4.544293E-02 sum= 4.546224E-02
```

26. An unidentified mismatch in a photon production sum
check...ace consistency check (25): Gamma sum

```
check photon production sum
  consis: mismatch at 2.893145E-04 gpd= 4.430334E-02 sum= 4.431263E-02
```

27. An unidentified mismatch in a photon production sum
check...ace consistency check (26): Gamma sum

```
check photon production sum
  consis: mismatch at 5.289603E-04 gpd= 2.668070E-01 sum= 2.668387E-01
```

28. An unidentified mismatch in a photon production sum
check...ace consistency check (27): Gamma sum

```
check photon production sum
  consis: mismatch at 7.914216E-04 gpd= 2.326468E-01 sum= 2.326168E-01
```

29. An unidentified mismatch in a photon production sum
check...ace consistency check (28): Gamma sum

```
check photon production sum
  consis: mismatch at 8.351323E-04 gpd= 1.777223E-01 sum= 1.777425E-01
```

30. An unidentified mismatch in a photon production sum
check...ace consistency check (29): Gamma sum

```
check photon production sum
  consis: mismatch at 8.404125E-04 gpd= 1.374507E-01 sum= 1.374290E-01
```

31. An unidentified mismatch in a photon production sum
check...ace consistency check (30): Gamma sum

```
check photon production sum
  consis: mismatch at 8.422861E-04 gpd= 1.314179E-01 sum= 1.314459E-01
```

32. An unidentified mismatch in a photon production sum
check...ace consistency check (31): Gamma sum

```
check photon production sum
  consis: mismatch at 8.836547E-04 gpd= 2.626701E-01 sum= 2.626423E-01
```

33. An unidentified mismatch in a photon production sum
check...ace consistency check (32): Gamma sum

```
check photon production sum
  consis: mismatch at 8.856503E-04 gpd= 1.794721E-01 sum= 1.795032E-01
```

34. An unidentified mismatch in a photon production sum
check...ace consistency check (33): Gamma sum

```
check photon production sum
  consis: mismatch at 9.367677E-04 gpd= 2.433107E-02 sum= 2.433382E-02
```

35. An unidentified mismatch in a photon production sum
check...ace consistency check (34): Gamma sum

```
check photon production sum
  consis: mismatch at 9.547250E-04 gpd= 2.584105E-02 sum= 2.584401E-02
```

36. An unidentified mismatch in a photon production sum
check...ace consistency check (35): Gamma sum

```
check photon production sum
  consis: mismatch at 1.083551E-03 gpd= 2.100143E-01 sum= 2.100436E-01
```

37. An unidentified mismatch in a photon production sum
check...ace consistency check (36): Gamma sum

```
check photon production sum
  consis: mismatch at 1.084892E-03 gpd= 1.818743E-01 sum= 1.818489E-01
```

38. An unidentified mismatch in a photon production sum
check...ace consistency check (37): Gamma sum

```
check photon production sum
  consis: mismatch at 1.161760E-03 gpd= 2.161738E-02 sum= 2.161960E-02
```

39. An unidentified mismatch in a photon production sum
check...ace consistency check (38): Gamma sum

```
check photon production sum
  consis: mismatch at 1.164961E-03 gpd= 2.042140E-02 sum= 2.041850E-02
```

40. An unidentified mismatch in a photon production sum
check...ace consistency check (39): Gamma sum

```
check photon production sum
  consis: mismatch at 1.171362E-03 gpd= 1.912549E-02 sum= 1.912286E-02
```

41. An unidentified mismatch in a photon production sum
check...ace consistency check (40): Gamma sum

```
check photon production sum
  consis: mismatch at 1.188095E-03 gpd= 2.500602E-02 sum= 2.500905E-02
```

42. An unidentified mismatch in a photon production sum
check...ace consistency check (41): Gamma sum

```
check photon production sum
  consis: mismatch at 1.189695E-03 gpd= 2.757590E-02 sum= 2.757869E-02
```

43. An unidentified mismatch in a photon production sum
check...ace consistency check (42): Gamma sum

```
check photon production sum
  consis: mismatch at 1.226958E-03 gpd= 1.787468E-02 sum= 1.787147E-02
```

44. An unidentified mismatch in a photon production sum
check...ace consistency check (43): Gamma sum

```
check photon production sum
  consis: mismatch at 1.229555E-03 gpd= 1.696005E-02 sum= 1.696222E-02
```

45. An unidentified mismatch in a photon production sum
check...ace consistency check (44): Gamma sum

```
check photon production sum
  consis: mismatch at 1.246201E-03 gpd= 1.647887E-02 sum= 1.647605E-02
```

46. An unidentified mismatch in a photon production sum
check...ace consistency check (45): Gamma sum

```
check photon production sum
  consis: mismatch at 1.258725E-03 gpd= 2.189303E-02 sum= 2.189590E-02
```

47. An unidentified mismatch in a photon production sum
check...ace consistency check (46): Gamma sum

```
check photon production sum
  consis: mismatch at 1.380061E-03 gpd= 1.875823E-02 sum= 1.875533E-02
```

48. An unidentified mismatch in a photon production sum
check...ace consistency check (47): Gamma sum

```
check photon production sum
  consis: mismatch at 1.383834E-03 gpd= 1.815461E-02 sum= 1.815245E-02
```

49. An unidentified mismatch in a photon production sum
check...ace consistency check (48): Gamma sum

```
check photon production sum
  consis: mismatch at 1.426395E-03 gpd= 2.907352E-02 sum= 2.907666E-02
```

50. An unidentified mismatch in a photon production sum
check...ace consistency check (49): Gamma sum

```
check photon production sum
  consis: mismatch at 1.575022E-03 gpd= 2.449124E-02 sum= 2.448797E-02
```

51. An unidentified mismatch in a photon production sum
check...ace consistency check (50): Gamma sum

```
check photon production sum
  consis: mismatch at 1.588056E-03 gpd= 2.288761E-02 sum= 2.288998E-02
```

52. An unidentified mismatch in a photon production sum
check...ace consistency check (51): Gamma sum

```
check photon production sum
  consis: mismatch at 1.943225E-03 gpd= 2.099318E-01 sum= 2.099594E-01
```

53. An unidentified mismatch in a photon production sum
check...ace consistency check (52): Gamma sum

```
check photon production sum
  consis: mismatch at 1.947219E-03 gpd= 1.729553E-01 sum= 1.729904E-01
```

54. An unidentified mismatch in a photon production sum
check...ace consistency check (53): Gamma sum

```
check photon production sum
  consis: mismatch at 1.951212E-03 gpd= 1.469087E-01 sum= 1.469301E-01
```

55. An unidentified mismatch in a photon production sum
check...ace consistency check (54): Gamma sum

```
check photon production sum
  consis: mismatch at 1.953875E-03 gpd= 1.337187E-01 sum= 1.337347E-01
```

56. An unidentified mismatch in a photon production sum
check...ace consistency check (55): Gamma sum

```
check photon production sum
  consis: mismatch at 1.955206E-03 gpd= 1.281241E-01 sum= 1.281404E-01
```

57. An unidentified mismatch in a photon production sum
check...ace consistency check (56): Gamma sum

```
check photon production sum
  consis: mismatch at 1.956537E-03 gpd= 1.231593E-01 sum= 1.231421E-01
```

58. An unidentified mismatch in a photon production sum
check...ace consistency check (57): Gamma sum

```
check photon production sum
  consis: mismatch at 1.960530E-03 gpd= 1.114514E-01 sum= 1.114837E-01
```

59. An unidentified mismatch in a photon production sum
check...ace consistency check (58): Gamma sum

```
check photon production sum
  consis: mismatch at 1.961861E-03 gpd= 1.087467E-01 sum= 1.087322E-01
```

60. An unidentified mismatch in a photon production sum
check...ace consistency check (59): Gamma sum

```
check photon production sum
  consis: mismatch at 1.968518E-03 gpd= 1.094512E-01 sum= 1.094272E-01
```

61. An unidentified mismatch in a photon production sum
check...ace consistency check (60): Gamma sum

```
check photon production sum
  consis: mismatch at 1.969214E-03 gpd= 1.125266E-01 sum= 1.125054E-01
```

62. An unidentified mismatch in a photon production sum
check...ace consistency check (61): Gamma sum

```
check photon production sum
  consis: mismatch at 1.972301E-03 gpd= 1.557295E-01 sum= 1.557133E-01
```

63. An unidentified mismatch in a photon production sum
check...ace consistency check (62): Gamma sum

```
check photon production sum
  consis: mismatch at 1.972966E-03 gpd= 1.823700E-01 sum= 1.823420E-01
```

64. An unidentified mismatch in a photon production sum
check...ace consistency check (63): Gamma sum

```
check photon production sum
  consis: mismatch at 1.982603E-03 gpd= 1.424660E-01 sum= 1.424877E-01
```

65. An unidentified mismatch in a photon production sum
check...ace consistency check (64): Gamma sum

```
check photon production sum
  consis: mismatch at 1.982978E-03 gpd= 1.322026E-01 sum= 1.322334E-01
```

66. An unidentified mismatch in a photon production sum
check...ace consistency check (65): Gamma sum

```
check photon production sum
  consis: mismatch at 1.984849E-03 gpd= 1.034872E-01 sum= 1.034729E-01
```

67. An unidentified mismatch in a photon production sum
check...ace consistency check (66): Gamma sum

```
check photon production sum
  consis: mismatch at 1.985818E-03 gpd= 9.615091E-02 sum= 9.613820E-02
```

68. An unidentified mismatch in a photon production sum
check...ace consistency check (67): Gamma sum

```
check photon production sum
  consis: mismatch at 1.987756E-03 gpd= 8.862941E-02 sum= 8.864697E-02
```

69. An unidentified mismatch in a photon production sum
check...ace consistency check (68): Gamma sum

```
check photon production sum
  consis: mismatch at 1.991543E-03 gpd= 9.122335E-02 sum= 9.120441E-02
```

70. An unidentified mismatch in a photon production sum
check...ace consistency check (69): Gamma sum

```
check photon production sum
  consis: mismatch at 1.992248E-03 gpd= 9.448402E-02 sum= 9.446557E-02
```

71. An unidentified mismatch in a photon production sum
check...ace consistency check (70): Gamma sum

```
check photon production sum
  consis: mismatch at 1.992953E-03 gpd= 9.907859E-02 sum= 9.911153E-02
```

72. An unidentified mismatch in a photon production sum
check...ace consistency check (71): Gamma sum

```
check photon production sum
  consis: mismatch at 1.996345E-03 gpd= 1.677745E-01 sum= 1.677920E-01
```

73. An unidentified mismatch in a photon production sum
check...ace consistency check (72): Gamma sum

```
check photon production sum
  consis: mismatch at 2.006277E-03 gpd= 1.917130E-01 sum= 1.916934E-01
```

74. An unidentified mismatch in a photon production sum
check...ace consistency check (73): Gamma sum

```
check photon production sum
  consis: mismatch at 2.008820E-03 gpd= 1.017483E-01 sum= 1.017645E-01
```

75. An unidentified mismatch in a photon production sum
check...ace consistency check (74): Gamma sum

```
check photon production sum
  consis: mismatch at 2.009919E-03 gpd= 8.640842E-02 sum= 8.642954E-02
```

76. An unidentified mismatch in a photon production sum
check...ace consistency check (75): Gamma sum

```
check photon production sum
  consis: mismatch at 2.011017E-03 gpd= 7.610772E-02 sum= 7.612295E-02
```

77. An unidentified mismatch in a photon production sum
check...ace consistency check (76): Gamma sum

```
check photon production sum
  consis: mismatch at 2.012115E-03 gpd= 6.880831E-02 sum= 6.879290E-02
```

78. An unidentified mismatch in a photon production sum
check...ace consistency check (77): Gamma sum

```
check photon production sum
  consis: mismatch at 2.015178E-03 gpd= 5.654388E-02 sum= 5.653688E-02
```

79. An unidentified mismatch in a photon production sum
check...ace consistency check (78): Gamma sum

```
check photon production sum
  consis: mismatch at 2.017143E-03 gpd= 5.191233E-02 sum= 5.193056E-02
```

80. An unidentified mismatch in a photon production sum
check...ace consistency check (79): Gamma sum

```
check photon production sum
  consis: mismatch at 2.019108E-03 gpd= 4.857764E-02 sum= 4.859984E-02
```

81. An unidentified mismatch in a photon production sum
check...ace consistency check (80): Gamma sum

```
check photon production sum
  consis: mismatch at 2.021072E-03 gpd= 4.609517E-02 sum= 4.608791E-02
```

82. An unidentified mismatch in a photon production sum
check...ace consistency check (81): Gamma sum

```
check photon production sum
  consis: mismatch at 2.026389E-03 gpd= 4.161198E-02 sum= 4.160494E-02
```

83. An unidentified mismatch in a photon production sum
check...ace consistency check (82): Gamma sum

```
check photon production sum
  consis: mismatch at 2.134991E-03 gpd= 2.297756E-01 sum= 2.298116E-01
```

84. An unidentified mismatch in a photon production sum
check...ace consistency check (83): Gamma sum

```
check photon production sum
  consis: mismatch at 2.135881E-03 gpd= 2.080954E-01 sum= 2.080636E-01
```

85. An unidentified mismatch in a photon production sum
check...ace consistency check (84): Gamma sum

```
check photon production sum
  consis: mismatch at 2.450163E-03 gpd= 1.910669E-01 sum= 1.910873E-01
```

86. An unidentified mismatch in a photon production sum
check...ace consistency check (85): Gamma sum

```
check photon production sum
  consis: mismatch at 2.459361E-03 gpd= 1.402710E-01 sum= 1.402547E-01
```

87. An unidentified mismatch in a photon production sum
check...ace consistency check (86): Gamma sum

```
check photon production sum
  consis: mismatch at 2.461235E-03 gpd= 1.335600E-01 sum= 1.335740E-01
```

88. An unidentified mismatch in a photon production sum
check...ace consistency check (87): Gamma sum

```
check photon production sum
  consis: mismatch at 2.463109E-03 gpd= 1.277019E-01 sum= 1.277266E-01
```

89. An unidentified mismatch in a photon production sum
check...ace consistency check (88): Gamma sum

```
check photon production sum
  consis: mismatch at 2.466856E-03 gpd= 1.181360E-01 sum= 1.181532E-01
```

90. An unidentified mismatch in a photon production sum
check...ace consistency check (89): Gamma sum

```
check photon production sum
  consis: mismatch at 2.470604E-03 gpd= 1.109432E-01 sum= 1.109580E-01
```

91. An unidentified mismatch in a photon production sum
check...ace consistency check (90): Gamma sum

```
check photon production sum
  consis: mismatch at 2.474351E-03 gpd= 1.057897E-01 sum= 1.058024E-01
```

92. An unidentified mismatch in a photon production sum
check...ace consistency check (91): Gamma sum

```
check photon production sum
  consis: mismatch at 2.615875E-03 gpd= 1.146400E-01 sum= 1.146528E-01
```

93. An unidentified mismatch in a photon production sum
check...ace consistency check (92): Gamma sum

```
check photon production sum
  consis: mismatch at 2.617486E-03 gpd= 1.080386E-01 sum= 1.080656E-01
```

94. An unidentified mismatch in a photon production sum
check...ace consistency check (93): Gamma sum

```
check photon production sum
  consis: mismatch at 2.620708E-03 gpd= 9.694964E-02 sum= 9.698420E-02
```

95. An unidentified mismatch in a photon production sum
check...ace consistency check (94): Gamma sum

```
check photon production sum
  consis: mismatch at 2.626420E-03 gpd= 8.244872E-02 sum= 8.247034E-02
```

96. An unidentified mismatch in a photon production sum
check...ace consistency check (95): Gamma sum

```
check photon production sum
  consis: mismatch at 2.628910E-03 gpd= 7.766455E-02 sum= 7.767263E-02
```

97. An unidentified mismatch in a photon production sum
check...ace consistency check (96): Gamma sum

```
check photon production sum
  consis: mismatch at 2.633889E-03 gpd= 7.013601E-02 sum= 7.014342E-02
```

98. An unidentified mismatch in a photon production sum
check...ace consistency check (97): Gamma sum

```
check photon production sum
  consis: mismatch at 2.636379E-03 gpd= 6.720621E-02 sum= 6.719801E-02
```

99. An unidentified mismatch in a photon production sum
check...ace consistency check (98): Gamma sum

```
check photon production sum
  consis: mismatch at 2.643848E-03 gpd= 6.097588E-02 sum= 6.096876E-02
```

100. An unidentified mismatch in a photon production sum
check...ace consistency check (99): Gamma sum

```
check photon production sum
  consis: mismatch at 2.649706E-03 gpd= 5.834302E-02 sum= 5.832259E-02
```

101. An unidentified mismatch in a photon production sum
check...ace consistency check (100): Gamma sum

```
check photon production sum
  consis: mismatch at 2.749404E-03 gpd= 2.281778E-01 sum= 2.281495E-01
```

102. An unidentified mismatch in a photon production sum
check...ace consistency check (101): Gamma sum

```
check photon production sum
  consis: mismatch at 2.757983E-03 gpd= 1.300605E-01 sum= 1.300772E-01
```

103. An unidentified mismatch in a photon production sum
check...ace consistency check (102): Gamma sum

```
check photon production sum
  consis: mismatch at 2.759919E-03 gpd= 1.179303E-01 sum= 1.179509E-01
```

104. An unidentified mismatch in a photon production sum
check...ace consistency check (103): Gamma sum

```
check photon production sum
  consis: mismatch at 2.761679E-03 gpd= 1.087677E-01 sum= 1.087433E-01
```

105. An unidentified mismatch in a photon production sum
check...ace consistency check (104): Gamma sum

- ```

check photon production sum
 consis: mismatch at 2.768718E-03 gpd= 8.350570E-02 sum= 8.349706E-02

```
106. An unidentified mismatch in a photon production sum  
*check...ace consistency check (105): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.770477E-03 gpd= 7.923975E-02 sum= 7.926954E-02

```
107. An unidentified mismatch in a photon production sum
check...ace consistency check (106): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.773996E-03 gpd= 7.256264E-02 sum= 7.258772E-02

```
108. An unidentified mismatch in a photon production sum  
*check...ace consistency check (107): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.776812E-03 gpd= 6.866770E-02 sum= 6.868377E-02

```
109. An unidentified mismatch in a photon production sum
check...ace consistency check (108): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.779628E-03 gpd= 6.588567E-02 sum= 6.589713E-02

```
110. An unidentified mismatch in a photon production sum  
*check...ace consistency check (109): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.782444E-03 gpd= 6.414236E-02 sum= 6.416057E-02

```
111. An unidentified mismatch in a photon production sum
check...ace consistency check (110): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.785259E-03 gpd= 6.351197E-02 sum= 6.348693E-02

```
112. An unidentified mismatch in a photon production sum  
*check...ace consistency check (111): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.788075E-03 gpd= 6.395743E-02 sum= 6.398336E-02

```
113. An unidentified mismatch in a photon production sum
check...ace consistency check (112): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.969848E-03 gpd= 2.068443E-01 sum= 2.068235E-01

```
114. An unidentified mismatch in a photon production sum  
*check...ace consistency check (113): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.982745E-03 gpd= 9.748669E-02 sum= 9.751189E-02

```

115. An unidentified mismatch in a photon production sum
check...ace consistency check (114): Gamma sum

```
check photon production sum
  consis: mismatch at 2.984743E-03 gpd= 9.240298E-02 sum= 9.242298E-02
```

116. An unidentified mismatch in a photon production sum
check...ace consistency check (115): Gamma sum

```
check photon production sum
  consis: mismatch at 2.986378E-03 gpd= 8.936021E-02 sum= 8.937313E-02
```

117. An unidentified mismatch in a photon production sum
check...ace consistency check (116): Gamma sum

```
check photon production sum
  consis: mismatch at 2.989648E-03 gpd= 8.579812E-02 sum= 8.577463E-02
```

118. An unidentified mismatch in a photon production sum
check...ace consistency check (117): Gamma sum

```
check photon production sum
  consis: mismatch at 2.991282E-03 gpd= 8.513036E-02 sum= 8.515047E-02
```

119. An unidentified mismatch in a photon production sum
check...ace consistency check (118): Gamma sum

```
check photon production sum
  consis: mismatch at 2.993462E-03 gpd= 8.553886E-02 sum= 8.551767E-02
```

120. An unidentified mismatch in a photon production sum
check...ace consistency check (119): Gamma sum

```
check photon production sum
  consis: mismatch at 3.045768E-03 gpd= 1.559075E-01 sum= 1.559412E-01
```

121. An unidentified mismatch in a photon production sum
check...ace consistency check (120): Gamma sum

```
check photon production sum
  consis: mismatch at 3.046544E-03 gpd= 1.449595E-01 sum= 1.449777E-01
```

122. An unidentified mismatch in a photon production sum
check...ace consistency check (121): Gamma sum

```
check photon production sum
  consis: mismatch at 3.048097E-03 gpd= 1.267377E-01 sum= 1.267512E-01
```

123. An unidentified mismatch in a photon production sum
check...ace consistency check (122): Gamma sum

```
check photon production sum
  consis: mismatch at 3.049649E-03 gpd= 1.123384E-01 sum= 1.123497E-01
```

124. An unidentified mismatch in a photon production sum
check...ace consistency check (123): Gamma sum

```

check photon production sum
  consis: mismatch at 3.053602E-03 gpd= 8.695399E-02 sum= 8.698264E-02

125. An unidentified mismatch in a photon production sum
check...ace consistency check (124): Gamma sum

check photon production sum
  consis: mismatch at 3.055578E-03 gpd= 7.834408E-02 sum= 7.835674E-02

126. An unidentified mismatch in a photon production sum
check...ace consistency check (125): Gamma sum

check photon production sum
  consis: mismatch at 3.060660E-03 gpd= 6.349944E-02 sum= 6.347201E-02

127. An unidentified mismatch in a photon production sum
check...ace consistency check (126): Gamma sum

check photon production sum
  consis: mismatch at 3.063765E-03 gpd= 5.789561E-02 sum= 5.792619E-02

128. An unidentified mismatch in a photon production sum
check...ace consistency check (127): Gamma sum

check photon production sum
  consis: mismatch at 3.066871E-03 gpd= 5.433295E-02 sum= 5.430222E-02

129. An unidentified mismatch in a photon production sum
check...ace consistency check (128): Gamma sum

check photon production sum
  consis: mismatch at 3.072234E-03 gpd= 5.188376E-02 sum= 5.189872E-02

130. An unidentified mismatch in a photon production sum
check...ace consistency check (129): Gamma sum

check photon production sum
  consis: mismatch at 3.108465E-03 gpd= 2.184902E-01 sum= 2.185138E-01

131. An unidentified mismatch in a photon production sum
check...ace consistency check (130): Gamma sum

check photon production sum
  consis: mismatch at 3.109563E-03 gpd= 1.718752E-01 sum= 1.718421E-01

132. An unidentified mismatch in a photon production sum
check...ace consistency check (131): Gamma sum

check photon production sum
  consis: mismatch at 3.110111E-03 gpd= 1.546172E-01 sum= 1.546366E-01

133. An unidentified mismatch in a photon production sum
check...ace consistency check (132): Gamma sum

check photon production sum
  consis: mismatch at 3.111059E-03 gpd= 1.312355E-01 sum= 1.312511E-01

```

134. An unidentified mismatch in a photon production sum
check...ace consistency check (133): Gamma sum

```
check photon production sum
  consis: mismatch at 3.113900E-03 gpd= 8.925964E-02 sum= 8.927693E-02
```

135. An unidentified mismatch in a photon production sum
check...ace consistency check (134): Gamma sum

```
check photon production sum
  consis: mismatch at 3.114998E-03 gpd= 7.946157E-02 sum= 7.943592E-02
```

136. An unidentified mismatch in a photon production sum
check...ace consistency check (135): Gamma sum

```
check photon production sum
  consis: mismatch at 3.261530E-03 gpd= 1.540808E-01 sum= 1.540579E-01
```

137. An unidentified mismatch in a photon production sum
check...ace consistency check (136): Gamma sum

```
check photon production sum
  consis: mismatch at 3.264617E-03 gpd= 1.237179E-01 sum= 1.236981E-01
```

138. An unidentified mismatch in a photon production sum
check...ace consistency check (137): Gamma sum

```
check photon production sum
  consis: mismatch at 3.268734E-03 gpd= 9.662129E-02 sum= 9.660911E-02
```

139. An unidentified mismatch in a photon production sum
check...ace consistency check (138): Gamma sum

```
check photon production sum
  consis: mismatch at 3.271355E-03 gpd= 8.440926E-02 sum= 8.439089E-02
```

140. An unidentified mismatch in a photon production sum
check...ace consistency check (139): Gamma sum

```
check photon production sum
  consis: mismatch at 3.273975E-03 gpd= 7.483266E-02 sum= 7.481825E-02
```

141. An unidentified mismatch in a photon production sum
check...ace consistency check (140): Gamma sum

```
check photon production sum
  consis: mismatch at 3.279215E-03 gpd= 6.113589E-02 sum= 6.111877E-02
```

142. An unidentified mismatch in a photon production sum
check...ace consistency check (141): Gamma sum

```
check photon production sum
  consis: mismatch at 3.283333E-03 gpd= 5.382353E-02 sum= 5.383314E-02
```

143. An unidentified mismatch in a photon production sum
check...ace consistency check (142): Gamma sum

- ```

check photon production sum
 consis: mismatch at 3.287450E-03 gpd= 4.870119E-02 sum= 4.870665E-02
```
144. An unidentified mismatch in a photon production sum  
*check...ace consistency check (143): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 3.291568E-03 gpd= 4.528633E-02 sum= 4.527872E-02
```
145. An unidentified mismatch in a photon production sum
check...ace consistency check (144): Gamma sum
- ```

check photon production sum
 consis: mismatch at 3.295685E-03 gpd= 4.335625E-02 sum= 4.333698E-02
```
146. An unidentified mismatch in a photon production sum  
*check...ace consistency check (145): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 3.301861E-03 gpd= 4.328224E-02 sum= 4.328952E-02
```
147. An unidentified mismatch in a photon production sum
check...ace consistency check (146): Gamma sum
- ```

check photon production sum
 consis: mismatch at 3.344499E-03 gpd= 1.967819E-01 sum= 1.968073E-01
```
148. An unidentified mismatch in a photon production sum  
*check...ace consistency check (147): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 3.347110E-03 gpd= 1.265851E-01 sum= 1.266133E-01
```
149. An unidentified mismatch in a photon production sum
check...ace consistency check (148): Gamma sum
- ```

check photon production sum
 consis: mismatch at 3.349179E-03 gpd= 9.647957E-02 sum= 9.645062E-02
```
150. An unidentified mismatch in a photon production sum  
*check...ace consistency check (149): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 3.355585E-03 gpd= 5.408677E-02 sum= 5.410363E-02
```
151. An unidentified mismatch in a photon production sum
check...ace consistency check (150): Gamma sum
- ```

check photon production sum
 consis: mismatch at 3.357654E-03 gpd= 4.762763E-02 sum= 4.759986E-02
```
152. An unidentified mismatch in a photon production sum  
*check...ace consistency check (151): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 3.361793E-03 gpd= 3.927530E-02 sum= 3.926498E-02
```

153. An unidentified mismatch in a photon production sum
check...ace consistency check (152): Gamma sum

```
check photon production sum
  consis: mismatch at 3.365341E-03  gpd= 3.545925E-02  sum= 3.544496E-02
```

154. An unidentified mismatch in a photon production sum
check...ace consistency check (153): Gamma sum

```
check photon production sum
  consis: mismatch at 3.433391E-03  gpd= 1.715153E-02  sum= 1.714915E-02
```